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(54) **Filling material for soft tissue implant prostheses and implants made therewith**

(57) A new soft tissue implant filling material is disclosed. The material may be polyvinylpyrrolidone, polyvinyl alcohol, hydroxypropylmethyl cellulose, polyethylene oxide, hyaluronic acid, sodium or calcium alginate,

hydrogel polyurethane, hydroxyethyl starch, polyglycolic acid, polyacrylamide, hydroxyethylmethacrylate (HEMA), and several naturally derived biopolymers including sodium kinate, seaweed, and agar.

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## EUROPEAN SEARCH REPORT

Application Number  
EP 96 30 0768

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	WO-A-93 22987 (CYTRX CORP) 25 November 1993 * page 18, line 35 * * page 19, line 1 - line 13; claims * ---	1	A61L27/00 A61F2/12
X	WO-A-94 07434 (LIPOMATRIX INC) 14 April 1994 * claims * ---	1	
X	EP-A-0 186 430 (AMERICAN MED SYST) 2 July 1986 * claims * ---	1	
X	US-A-4 731 081 (TIFFANY JOHN S ET AL) 15 March 1988 * claims * ---	1	
X	PLASTIC AND RECONSTRUCTIVE SURGERY, vol. 91, no. 6, May 1993, pages 1057-1062, XP000572165 NEAL HANDEL ET AL.: "AN IN VIVO STUDY OF THE EFFECT OF VARIOUS BREAST IMPLANT FILLER MATERIALS ON MAMMOGRAPHY" * page 1059 * ---	1	TECHNICAL FIELDS SEARCHED (Int.Cl.6) A61L
X	FR-A-2 693 901 (LATOUCHE XAVIER) 28 January 1994 * the whole document * ---	1	
X	WO-A-93 00867 (CHRISTENSEN JAMES MARLOW ;AINPOUR PARVIZ ROBERT (US)) 21 January 1993 * claims; examples 1-7 * ---	1	
A	EP-A-0 338 813 (KOKEN KK ;SHISEIDO CO LTD (JP)) 25 October 1989 * claims; examples * ---	1	
		-/--	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 6 September 1996	Examiner ESPINOSA, M
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

EPO FORM 1501 (12/94) (P0401)



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### CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid,  
namely claims:
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

### LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions,  
namely:

See sheet -B-

- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid,  
namely claims:
- ☐ None of the further search fees has been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims.  
namely claims:



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## EUROPEAN SEARCH REPORT

Application Number  
EP 96 30 0768

DOCUMENTS CONSIDERED TO BE RELEVANT				
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)	
X	FR-A-2 568 127 (GEISTLICH SOEHNE AG) 31 January 1986 * claims *	1,14		
X	--- PLASTIC AND RECONSTRUCTIVE SURGERY, vol. 94, no. 2, 1 August 1994, pages 306-317, XP000572178 KANT LIN ET AL: "HYALURONIC ACID-FILLED MAMMARY IMPLANTS: AN EXPERIMENTAL STUDY" * page 307 - page 309 *	1,11		
X	--- WO-A-93 20780 (UNIV PENNSYLVANIA ; PHILADELPHIA CHILDREN HOSPITAL (US)) 28 October 1993 * claims *	1,11		
X	--- US-A-5 219 360 (GEORGIAD NICHOLAS G) 15 June 1993 * claims *	1,11		
X	--- WO-A-94 25078 (SEBBIN LAB ; LE PESTEUR JACQUES (FR); CHITARRINI GINO U (FR)) 10 November 1994 * claims *	1,11		TECHNICAL FIELDS SEARCHED (Int.Cl.6)
X	--- FR-A-2 677 539 (MAS JEAN CLAUDE) 18 December 1992 * claims *	1		
X	--- US-A-5 344 451 (DAYTON MICHAEL P) 6 September 1994 * column 4, line 26 - line 68; claims *	1,11,13		
X	--- FR-A-2 691 068 (ARION HENRI) 19 November 1993 * the whole document *	1,13		
-/--				
The present search report has been drawn up for all claims				
Place of search THE HAGUE		Date of completion of the search 6 September 1996	Examiner ESPINOSA, M	
<p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons</p> <p>&amp; : member of the same patent family, corresponding document</p>				

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#### LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims 1 (partially); 2-5,15-18 (completely) :  
An implantable soft tissue prosthesis comprising a hollow shell and a filling material comprising a gel or viscous liquid consisting of polyvinylpyrrolidon.
2. Claims 1 (partially); 6-11 ,13 (completely) :  
An implantable soft tissue prosthesis comprising a hollow shell and a filling material comprising a gel or viscous liquid consisting of hydroxypropylmethyl cellulose, hyaluronic acid, sodium or calcium alginate, hydroxyethyl starch and several naturally derived biopolymers including sodium kinate, seaweed and agar.
3. Claims 1 (partially); 12 (completely) :  
An implantable soft tissue prosthesis comprising a hollow shell and a filling material comprising a gel or viscous liquid consisting of polyvinyl alcohol.
4. Claims 1 (partially); 14 (completely) :  
An implantable soft tissue prosthesis comprising a hollow shell and a filling material comprising a gel or viscous liquid consisting of polyacrylamide.
5. Claim 1 (partially) :  
An implantable soft tissue prosthesis comprising a hollow shell and a filling material comprising a gel or viscous liquid consisting of polyethylene oxide.
6. Claim 1 (partially) :  
An implantable soft tissue prosthesis comprising a hollow shell and a filling material comprising a gel or viscous liquid consisting of hydrogel polyurethane.
7. Claim 1 (partially) :  
An implantable soft tissue prosthesis comprising a hollow shell and a filling material comprising a gel or viscous liquid consisting of hydroxyethyl methacrylate (HEMA).



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## EUROPEAN SEARCH REPORT

Application Number  
EP 96 30 0768

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	FR-A-2 707 499 (NAVATEL PATRICE) 20 January 1995 * claims *	1,13	
X	EP-A-0 575 035 (PERRY LARRY ;MAXWELL PATRICK G (US)) 22 December 1993 * claims *	1,13	
			TECHNICAL FIELD(S) SEARCHED (Int.Cl.6)
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 6 September 1996	Examiner ESPINOSA, M
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